Logash+Elasticsearch+Kibana 日志系统安装部署

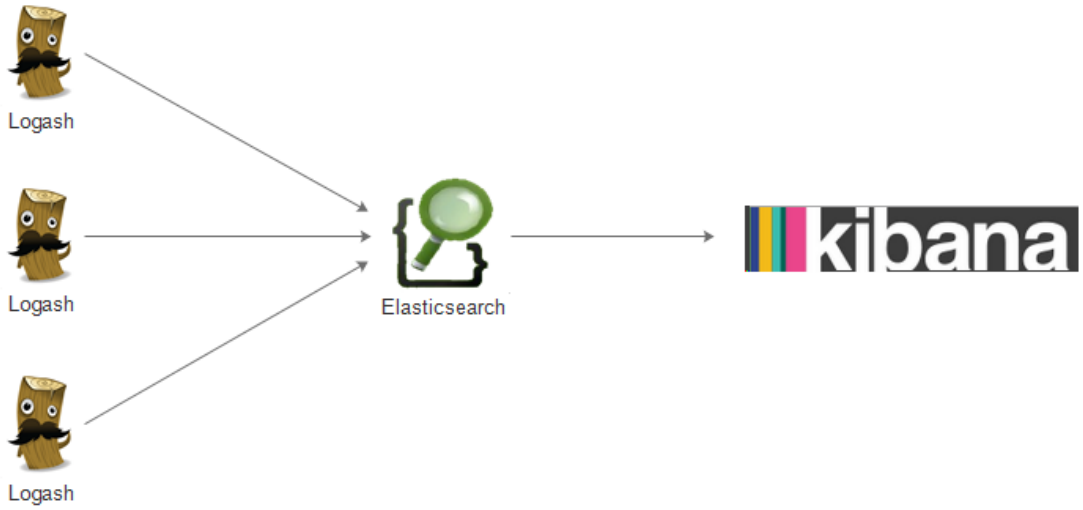
网海过客 www.chinasa.net

环境

类型	操作系统	IP	软件包		
服务端	Centos 6.5 X64	192.168.0.100	JDK1.8	Elasticsearch-1.4.4	Kibana-4.0.2
客户端	Centos 6.5 X64	192.168.0.101	JDK1.8	Logash-1.4.2	

注：Logash、Elasticsearch、Kibana 运行需要 JDK。

Logash Elasticsearch Kibana 流程图



服务端安装-192.168.0.100

JDK 安装

#yum install java-1.8.0-openjdk

Elasticsearch 安装

#tar zxvf elasticsearch-1.4.4.tar.gz -C /opt
配置
#vi /opt/elasticsearch-1.4.4/conf/elasticsearch.yml
加入下面内容:
http.cors.enabled: true
http.cors.allow-origin: "*"

注: 默认端口:9200

Elasticsearch 启动

#/opt/elasticsearch-1.4.4/bin/elasticsearch -Xmx2g -Xms2g -Des.index.storage.type=memory –d
注: -Xmx2g 为最小内存和最大内存
-d 后台运行

Kibana 安装

#tar zxvf kibana-4.0.2-linux-x64.tar.gz -C /opt
配置
#vi /opt/logash/kibana-4.0.2-linux-x64/config/kibana.yml
添加 elasticsearch 地址，添加即可。
elasticsearch_url: http://localhost:19200

Kibana 启动

#/opt/logash/kibana-4.0.2-linux-x64/bin/kibana -p 25601 > /dev/null 2>&1 &

注: -p 指定端口，默认端口 5601

客户端安装-192.168.0.101

JDK 安装

#yum install java-1.8.0-openjdk

Logash 安装

#tar zxvf logstash-1.4.2.tar.tz -C /opt

Logash 配置

创建 nginx_log.conf 配置文件
#vi /opt/logstash-1.4.2/conf/nginx_log.conf
内容如下:

```
input {
        file {
                type => "nginx_log"
                path => "/opt/nginx/logs/access.log"
        }
}
output {
        stdout { codec => rubydebug }
        elasticsearch_http {
                host => "192.168.0.100"
                port => "9200"
        }
}
```

创建 nginx 日志格式配置文件

注: path => "/opt/nginx/logs/access.log" #Nginx 日志文件
  match => { "message" => "%{NGINXACCESS}" } #Nginx 日志格式，变量%{NGINXACCESS}会自动在/opt/logstash-1.4.2/patterns 目录下查找。
    host => "192.168.0.100" # elasticsearch 服务端 IP
    port => "9200" # elasticsearch 服务端端口

#vi /opt/logstash-1.4.2/patterns/nginx
NGUSERNAME [a-zA-Z\.\@\-\+_%]+
NGUSER %{NGUSERNAME}
NGINXACCESS %{IPORHOST:remote_addr} - - \[%{HTTPDATE:time_local}\]
"%{WORD:method} %{URIPATHPARAM:request}
HTTP/%{NUMBER:httpversion}" %{INT:status} %{INT:body_bytes_sent} %{QS:http_referer} %{QS:http_user_agent}

Logash 启动

#/opt/logstash-1.4.2/bin/logstash -f /opt/logstash-1.4.2/conf/nginx_log.conf > /dev/null 2>&1 &

Kibana 添加地图功能

#wget http://geolite.maxmind.com/download/geoip/database/GeoLiteCity.dat.gz
#gunzip GeoLiteCity.dat.gz
#mv GeoLiteCity.dat /opt/logstash-1.4.2/conf

在/opt/logstash-1.4.2/conf/nginx_log.conf 配置文件 filter{} 加入以下内容:

```
    geoip {
      source => "remote_addr"
      target => "geoip"
      database => "/opt/logstash-1.4.2/conf/GeoLiteCity.dat"
      add_field => [ "[geoip][coordinates]", "%{[geoip][longitude]}" ]
      add_field => [ "[geoip][coordinates]", "%{[geoip][latitude]}"  ]
    }
    mutate {
      convert => [ "[geoip][coordinates]", "float"]
    }
  }
}
```

注: source => "remote_addr" #对应 nginx 日志客户端 IP

Kibana 添加高德地图

修改 index.js 文件

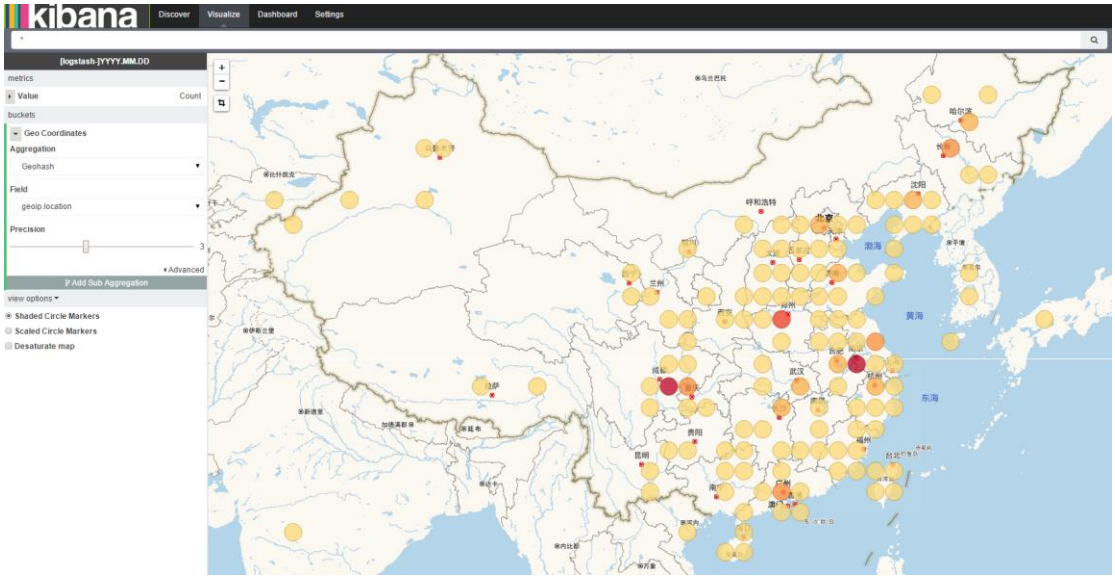
#vi kibana-4.0.2-linux-x64/src/public/index.js

```
/*                var tileLayer = L.tileLayer('https://otile{s}-s.mqcdn.com/tiles/1.0.0/map/{z}/{x}/{y}.jpeg', {
                  attribution: 'Tiles by <a href="http://www.mapquest.com/">MapQuest</a> &mdash; ' +
                     'Map data &copy; <a href="http://openstreetmap.org">OpenStreetMap</a> contributors, ' +
                     '<a href="http://creativecommons.org/licenses/by-sa/2.0/">CC-BY-SA</a>',
                  subdomains: '1234'
               });
*/
```

将以上内容注释，并添加以下内容：

```
/*
  gaode map
*/
var tileLayer =
L.tileLayer('http://webrd0{s}.is.autonavi.com/appmaptile?lang=zh_cn&size=1&scale=1&style=8&x={x}&y={y}&z={
z}', {
          attribution: 'Tiles by <a href="http://www.mapquest.com/">MapQuest</a> — ' +
                  'Map data ? <a href="http://openstreetmap.org">OpenStreetMap</a> contributors, ' +
                  '<a href="http://creativecommons.org/licenses/by-sa/2.0/">CC-BY-SA</a>',
                  subdomains:["1","2","3","4"],
                  variants: {
                     Satellite:{
                           url: 'http://webst0{s}.is.autonavi.com/appmaptile?style=6&x={x}&y={y}&z={z}'
                           }
                     }
               });
```

高德地图效果



Elasticsearch 认证

使用 Shield 对 Elasticsearch 认证
安装
#/opt/logash/elasticsearch-1.4.4/bin/plugin -i elasticsearch/license/latest
#/opt/logash/elasticsearch-1.4.4/bin/plugin -i elasticsearch/shield/latest

添加用户，并设置密码
#/opt/logash/elasticsearch-1.4.4/bin/shield/esusers useradd es_admin -r admin
Enter new password:
Retype new password:

注: elasticsearch 设置了用户名密码，logash 客户端也需要添加用户名密码，才能将日志传入 elasticsearch 里。
Kibana 也需要设置用户名密码，才能正常访问

如需要取消认证，直接将 shiled 删除
#/opt/logash/elasticsearch-1.4.4/bin/plugin -r elasticsearch/license/latest
#/opt/logash/elasticsearch-1.4.4/bin/plugin –r elasticsearch/shield/latest

注:取消了 elasticsearch 认证，需要将 kibana 和 logash 客户端配置文件取消用户名密码配置。

Kibana 认证

修改配置文件
#vi /opt/logash/kibana-4.0.2-linux-x64/config/kibana.yml
添加用户名密码
kibana_elasticsearch_username: es_admin
kibana_elasticsearch_password: 123456

Logash 客户端添加认证

修改配置文件
#vi /opt/logstash-1.4.2/conf/nginx_log.conf

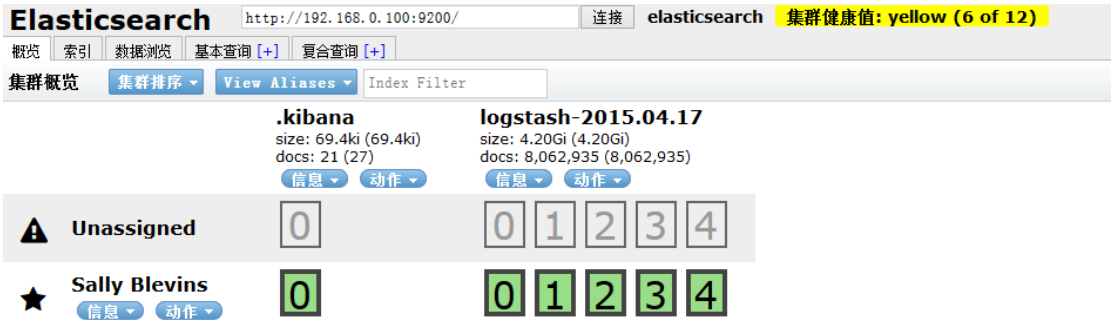
```
output {
        stdout { codec => rubydebug }
        elasticsearch_http {
                host => "192.168.0.100"
                user => "es_admin"          #用户名
                password => "123456"      #密码
                port => "9200"
        }
}
```

Elasticsearch 插件安装

Elasticsearch-head
功能: 集群管理工具

安装
#wget https://github.com/mobz/elasticsearch-head/archive/master.zip
#unzip master.zip
#mkdir –p /opt/logash/elasticsearch-1.4.4/plugins/head/_site
#mv elasticsearch-head-master/* /opt/logash/elasticsearch-1.4.4/plugins/head/_site

访问 http://192.168.0.100:9200/_plugin/head/
可方便查询索引数据及索引大小，如下图所示:



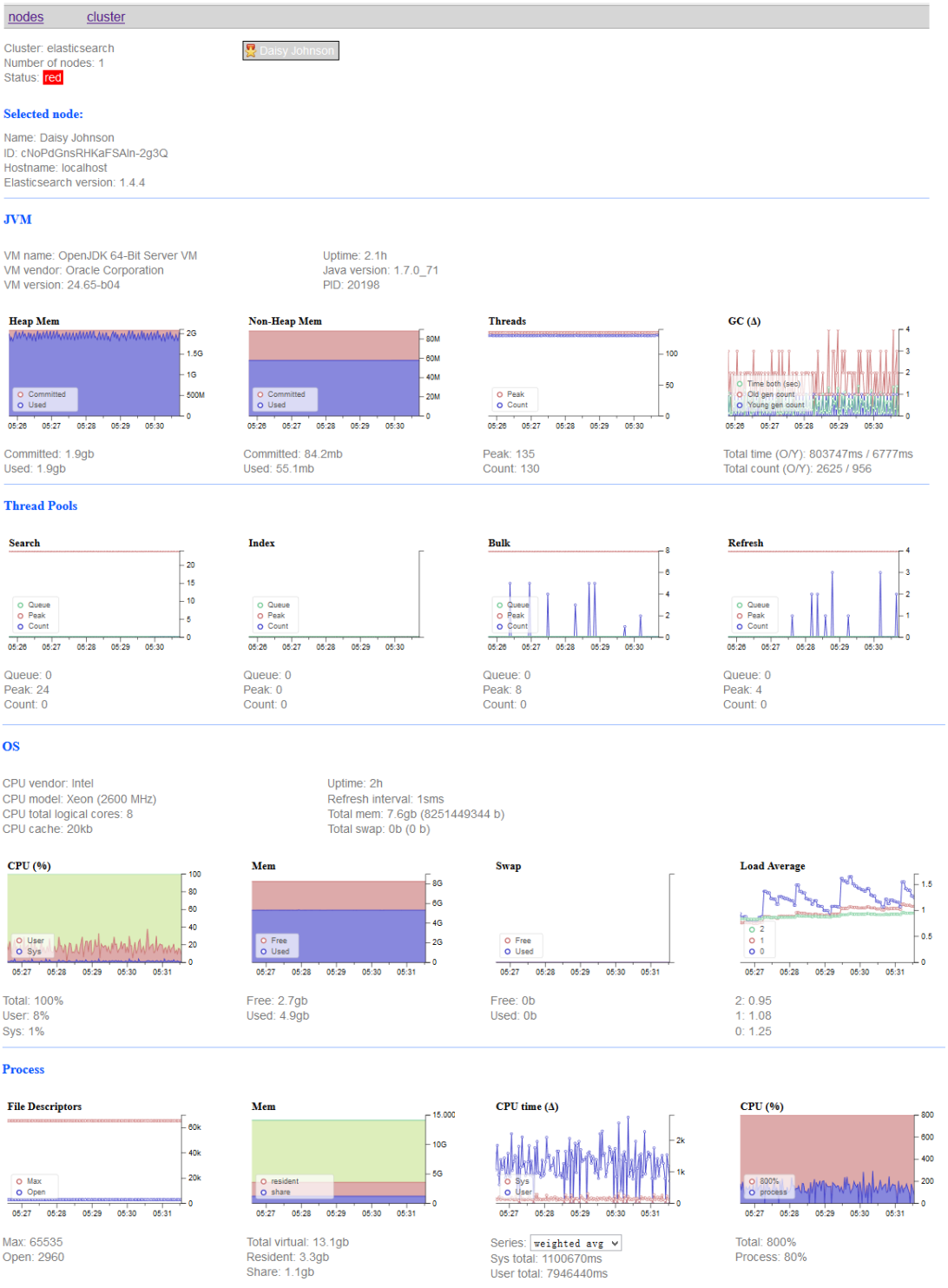
Elasticsearch-bigdesk

功能: 监控查看 cpu、内存使用情况，索引数据、搜索情况，http 连接数等

安装

#/elstaicsearch/bin/plugin -i lukas-vlcek/bigdesk

访问 http://192.168.0.100:9200/_plugin/bigdesk



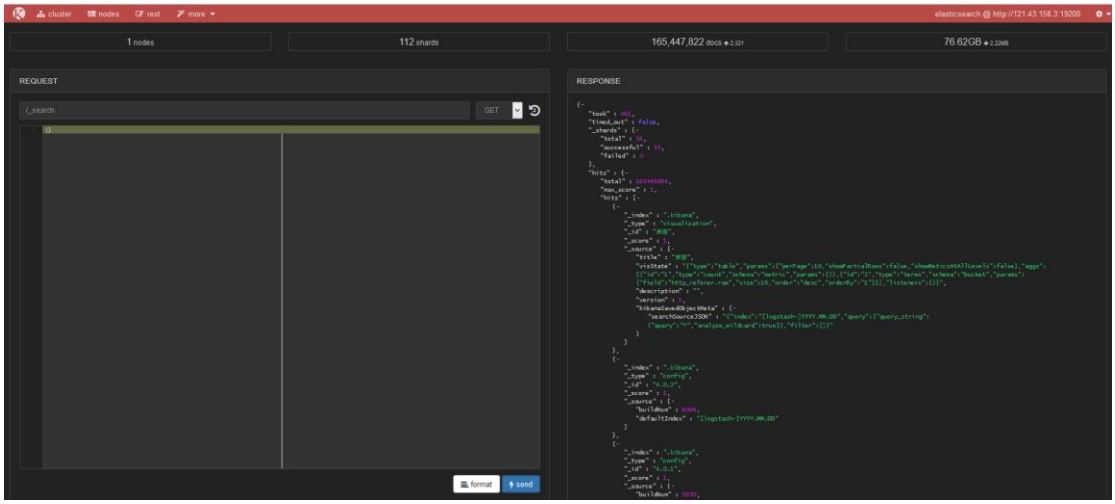
Elasticsearch-kofp

功能: 集群管理，监控查看 cpu、内存使用情况、在线查询/提交 elsticsearch 数据

安装

```
#/elstaicsearch/bin/plugin –I lmenezes/elasticsearch-kopf
```

访问 http://192.168.0.100:9200/_plugin/kopf



Elasticsearch 创建索引模板

默认调用的索引模板会自动分词，对数据分析不太方便。通过 curl 往 elsticsearch 里 PUT syslog-* 索引模板。

```
# curl -ues_admin:123456 -XPUT http://192.168.0.100:9200/_template/template_syslog -d '
{
  "template" : "syslog-*",
  "settings" : {
    "index.refresh_interval" : "5s"
  },
  "mappings" : {
    "_default_" : {
        "_all" : {"enabled" : true},
        "dynamic_templates" : [ {
          "string_fields" : {
            "match" : "*",
            "match_mapping_type" : "string",
            "mapping" : {
              "type" : "string", "index" : "analyzed", "omit_norms" : true,
                "fields" : {
                  "raw" : { "type": "string", "index" : "not_analyzed", "ignore_above" : 256,
"doc_values": true }
                }
            }
          }
        } ],
        "properties" : {
          "@version": { "type": "string", "index": "not_analyzed" },
          "@timestamp": { "type": "date", "index": "not_analyzed", "doc_values": true, "format":
"dateOptionalTime" },
          "geoip"  : {
            "type" : "object",
              "dynamic": true,
              "path": "full",
              "properties" : {
                "location" : { "type" : "geo_point" }
              }
          }
        }
    }
  }
}'
```

注:

-ues_admin:123456　　#elsticserach 用户名密码

"type": "date", "index": "not_analyzed"　　#索引不分词

在 logash 配置文件里就可以创建 syslog-开头的索引。Elsticsearch 会自动匹配 syslog-*索引模板。

```
output {
        stdout { codec => rubydebug }
        elasticsearch_http {
                host => "192.168.0.100"
                user => "es_admin"
                password => "123456"
                port => "9200"
                index => "syslog-%{+YYYY.MM.dd}"
        }
}
```

Elsticsearch 常用操作

查询索引

#curl http://192.168.0.100:9200/syslog

#curl http://192.168.0.100:9200/ _aliases　　#查询 elsticsearch 所有索引列表

创建,更新索引

curl -XPUT http://192.168.0.100:9200/syslog -d '……'

删除索引

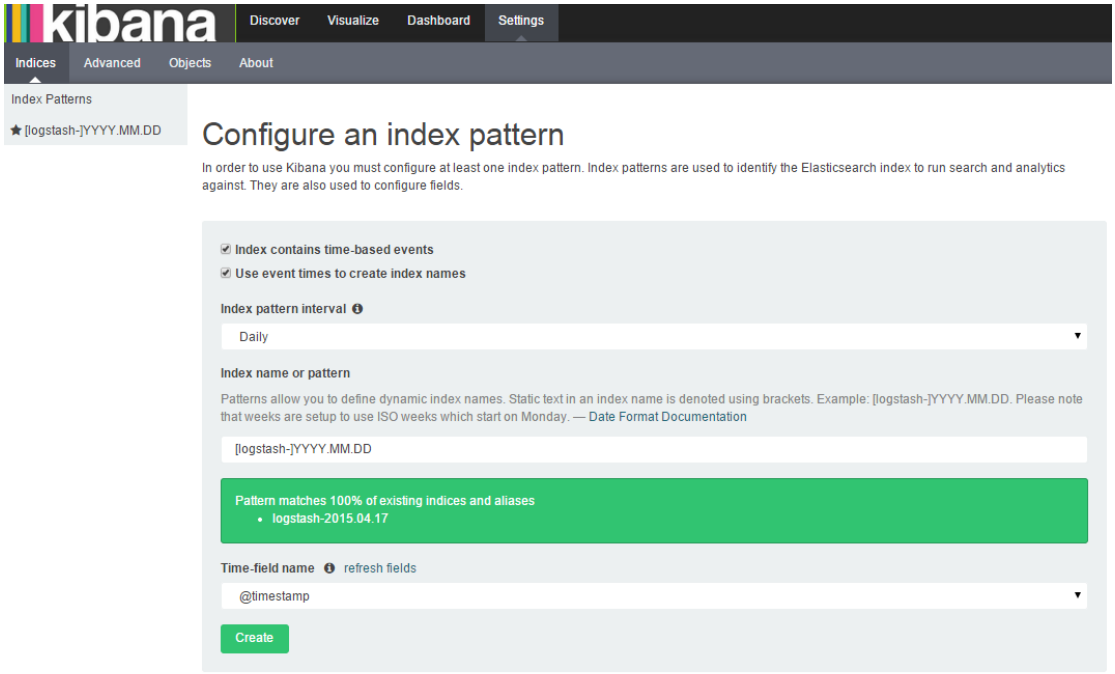
curl -XDELETE http://192.168.0.100:9200/syslog

注:也可使用正则，#curl -XDELETE http://192.168.0.100:9200/syslog*

Kibana 日志分析

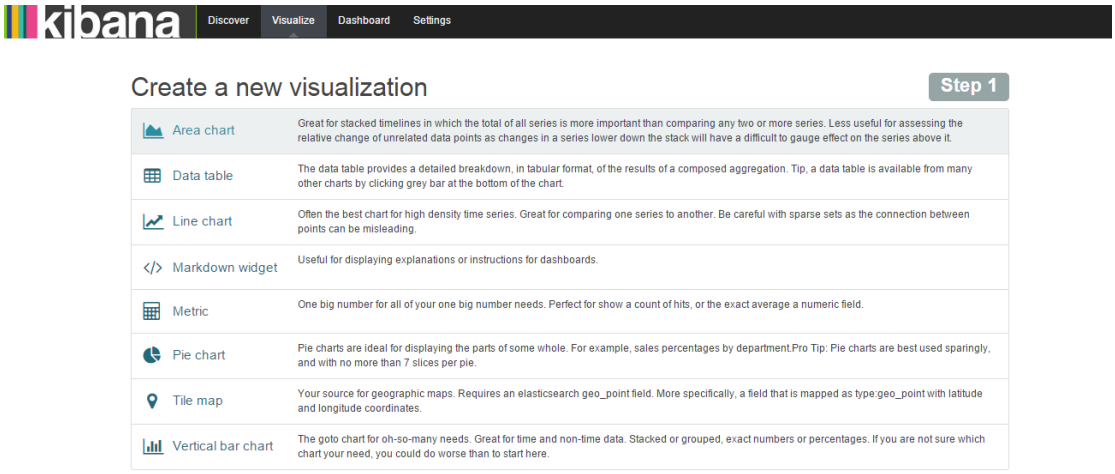
添加索引

访问 http://192.168.0.100:5601

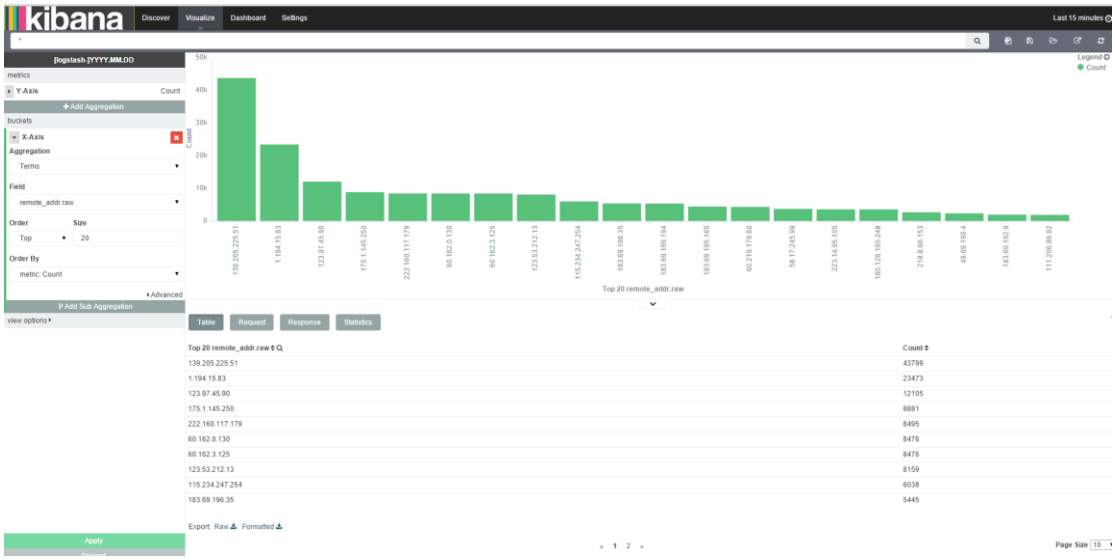


添加 Visualize 图表

有多种图表选择，如下图所示:



添加 Vertical bar chart 图表，统计访问前 20 的 IP



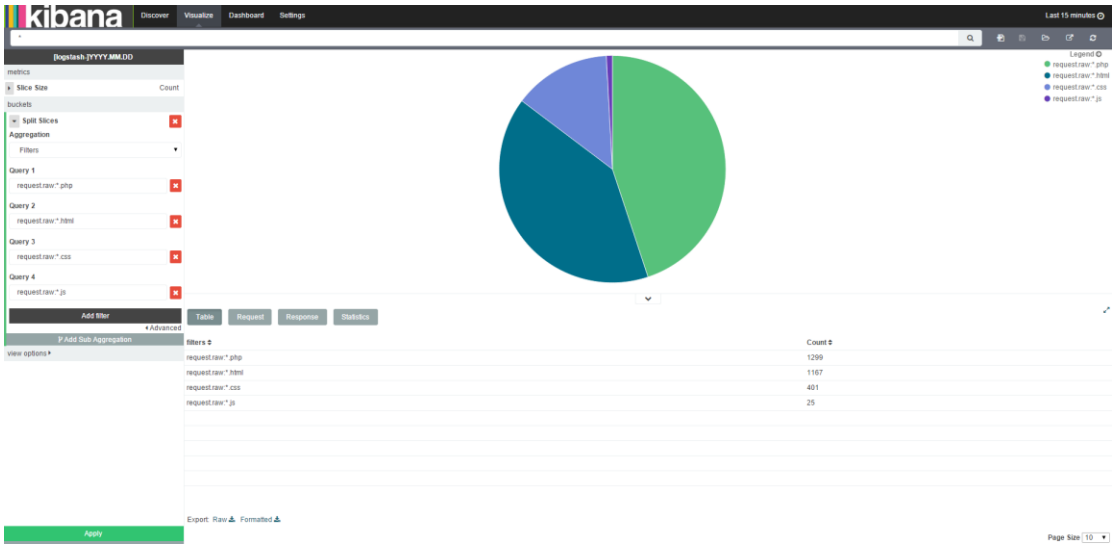
Metrics-Y-Axis 选择 Count

Buckets-X-Axis-Aggregation 选择 Terms

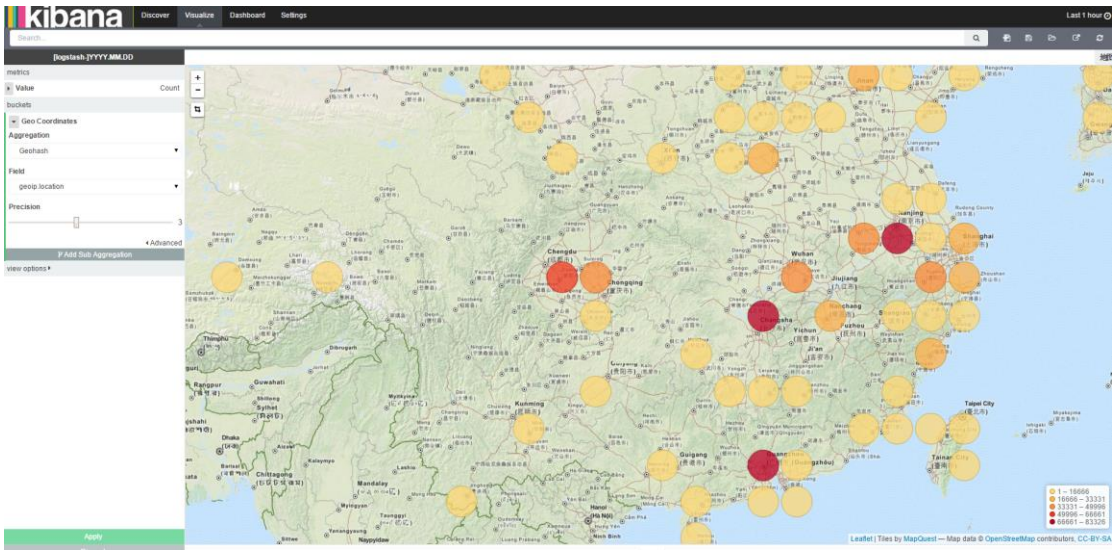
Field 选择 remote_addr.raw

添加 Pie chart 图表

统计文件类型

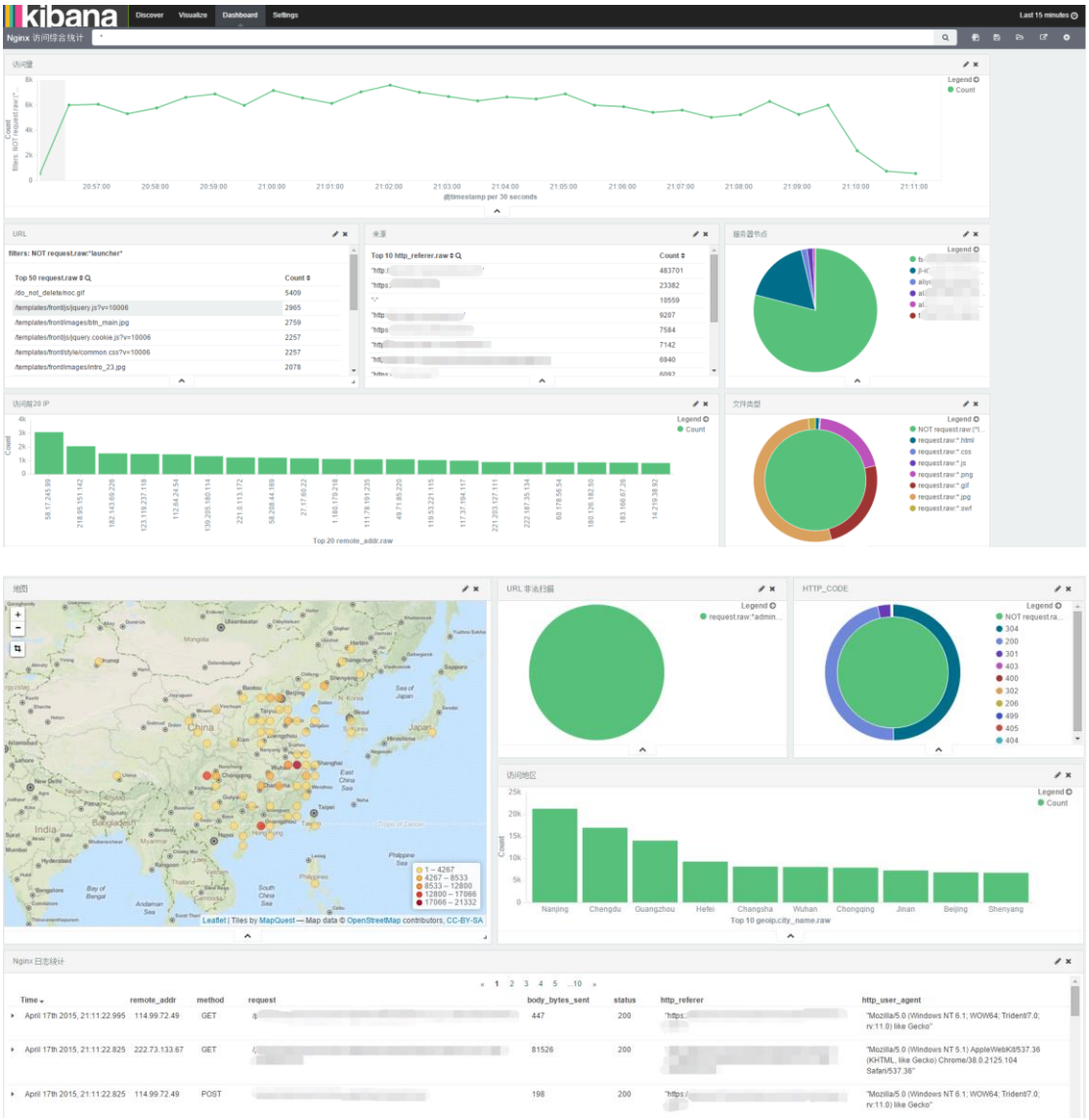


添加 Tile map 图表



添加 dashboard 图表

可以将多张 Visualize 图表添加到 dashboard 里。如下图所示:



Kibana 统计网络带宽

由于 kibana sum 函数要求被统计的字段为 number 类型，默认 nginx 日志所有字段为 string 类型。
实例：统计 Nginx 占用带宽最高的前 10 条 URL

将以下内容添加到 logash 配置文件的 filter{}模块中

```
mutate {
    convert => ["body_bytes_sent","float"]      #将 body_bytes_sent 字段类型转换为 float 类型。
}
```

注:需要重新生成索引才能生效。

在 kibana 里添加图表
如下图所示：

Kibana 查询说明

可使用 AND、OR、NOT 过滤字段条件。
注: AND、OR、NOT 必须大写

如:查询 request.raw 字段包含.rar 文件，并且 status 不等于 200
request.raw:*.rar AND NOT status.raw:200

如:查询 request.raw 字段包含.jsp 和 admin.php 或者 remote_addr.raw 字段里包含 192.168 的 IP 地址
Request.raw:(*.jsp *admin.php) OR remote_addr.raw:*192.168

更多查询功能，如下图所示: